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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/694,624

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Philip L. Cole

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FULBRIGHT & JAWORSKI L.L.P.  
600 CONGRESS AVE.  
SUITE 2400  
AUSTIN, TX 78701

EXAMINER

GREENE, DANIEL LAWSON

ART UNIT

PAPER NUMBER

3663

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/694,624

Applicant(s)

COLE, PHILIP L.

Examiner

Daniel L. Greene Jr.

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 4,5 and 10-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Oath/Declaration***

### ***Drawings***

1. Figure 4 was received on 6/8/2006. This Figure is acceptable in overcoming the objection of section 2 of the previous Office action mailed 2/13/2006 however it appears to have the same issues as set forth in the PTO-948 attached to said previous Office action. In order to avoid abandonment, the drawing informalities noted in the PTO-948 mailed on 2/13/2006, must be corrected. Correction can only be effected in the manner set forth in the above noted paper.

### ***Response to Arguments***

2. Applicant's arguments see pages 8-16, filed 6/8/2006, with respect to sections 5-9 and 13 of said previous Office action have been fully considered and are persuasive. Accordingly the Objections and Rejections of said sections 5-9 and 13 have been withdrawn.

3. Applicant's arguments concerning section 12 of said Office action have been fully considered but they are not persuasive.

Regarding section 12, i.e. Rhodes, according to applicant's arguments, page 17, the last line of the second paragraph, it appears applicant does not consider a Gamma ray to be a photon "the GRTI detects gammy rays" (sic). Applicant is invited to review a definition of the term "photon" from [www.Answers.com](http://www.Answers.com). wherein it is clearly set forth that a "Gamma ray" is indeed a "photon".

If applicant continues to allege that a gamma ray is NOT a photon then substantiating evidence in support of applicants definition must be submitted. Accordingly Rhodes does indeed detect an emerging "photon" beam. Further Figures 7-10 clearly show that the photon energy levels are indeed used to identify the material including cocaine, heroin, sugar and halite by the indicia of the x axis, i.e. "Gamma-ray energy, MeV".

Rhodes clearly discloses that the neutron detectors (which are indeed fission fragments as evidenced by the attached reference Nuclear Fission by Macaulay) can be replaced with gamma-ray detectors (what applicant has termed scintillator paddles) however Rhodes also makes it very clear that the two systems would be combined on page 294 last paragraph, "We propose to supplement it (i.e. FNTI) with a companion gamma-ray transmission imaging hodoscope system similar to Fig. 15" and again on page 296 the "more effective surveillance of explosives...would result from **integration of different types of sensors and detection methods...**" (Emphasis added). The Examiner understands the definition of Integration to mean:

1. **The state of combination or the process of combining into completeness and harmony. (Emphasis added)**
2. The organization of the psychological or social traits and tendencies of a personality into a harmonious whole.
3. A physiological increase or building up, as by accretion or anabolism.
4. A recombination event in which a genetic element is inserted.

Regarding Geus et al. Applicant's arguments are unpersuasive as applicant has not shown that the references do not teach what the examiner has stated they teach,

nor has applicant shown that the examiner's reasoning for and manner of combining the teachings of the references is improper or invalid. Further, applicant's allegations that Geus et al. does not determine a photon energy level of the emerging photon beam is untenable. Applicant is directed to figures 2A – 2C.

Regarding Majewski et al. Applicant's arguments are unpersuasive as applicant has not shown that the references do not teach what the examiner has stated they teach, nor has applicant shown that the examiner's reasoning for and manner of combining the teachings of the references is improper or invalid. Further, applicant's allegations that Majewski et al. does not determine a photon energy level of the emerging photon beam is untenable. Applicant is directed to figure 4.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case Rhodes clearly sets forth motivation to integrate different types of sensors and detection methods. Clearly a PPAD is nothing more than a different type of sensor sensitive to a specific regime of photon energies and thus it would be obvious to utilize such a detector.

**The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**

***Claim Rejections - 35 USC § 103***

**4. Claims 1-3, and 6-9 are rejected under 35 U.S.C. 102(b) as anticipated by “Associated Particle Sealed Tube Neutron probe for characterization of materials” by Rhodes et al. or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rhodes et al. in view of either U.S. Patent 5,742,660 to Majewski et al. or U.S. Patent 6,195,413 to Geus et al. for the reasons set forth in section 12 of the previous Office action as explained in more detail in section 3 above.**

**5. Claims 1-3 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Rhodes et al. or Fainberg “Explosives Detection for Aviation Security” Science Vol. 255 pp 1531- 1537, 20 March 1992 in view of Geus et al., Majewski et al., Lieber et al. “Inelastic Proton Scattering of Holmium-106 and Gadolinium-150”, Leo “Techniques for Nuclear and Particle Physics Experiments”, Sanabria et al. “Parallel-plate avalanche detectors with anode wire grids” and Kotov et al. Method of Measurement of Cross Sections of Heavy Nuclei Fission Induced by Intermediate Energy Protons”**

Rhodes (see for example only page 296 second paragraph) and Fainberg (See for example only page 1536 "Integrating Security" "A suggested approach is to combine technologies in such a way that the strengths of one may compensate for the weaknesses of others." both discuss contraband detection systems including the motivation to combine and integrate various detectors and detection methods.

Leo teaches that scintillation detectors are among the most reliable and convenient detectors available in, for example, section 7. "Scintillation Detectors"

Sanabria et al. teaches using a sizable array of target-detector pairs increases the statistics of measurement and that Parallel-plate avalanche detectors (PPAD)

- a. Are very efficient in detecting fission fragments,
- b. Are transparent to high energy photon beams
- c. Have a low production cost

Lieber et al., Geus et al., Majewski et al. can all be relied upon to show it is known in the art to utilize separate detectors sensitive to different energies for the benefit of increased energy resolution.

Kotov et al. discloses a system almost identical to applicant's instant claimed invention except Kotov et al. is utilizing protons as the incident energy beam instead of photons however the similarities cannot be ignored and it is known for interrogation systems to employ various incident energy beams including protons, photons, neutrons, magnetic resonance etc.

At the time of the invention it would have been obvious to one of ordinary skill in the art to utilize scintillation detectors and PPAD's to identify material for the inherent benefits each detector provides. Further it is obvious to utilize detectors with different sensitivities for the benefits of increased energy resolution, simplifying the data analysis computation system due to energy regime specificity (less data per detector to analyze), etc.

Clearly the invention is directed towards identifying material using scintillation detectors and PPADs, however a review of the art of record clearly shows that the utilization of different types of detectors is nothing new in the field of material identification or contraband detection.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

7. Further, Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 6/8/2006 also prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L. Greene Jr. whose telephone number is (571) 272-6876. The examiner can normally be reached on Mon-Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3663

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DIG  
2006-08-18

JACK KEITH  
SUPERVISORY PATENT EXAMINER